

**METHOD AND APPARATUS FOR CAPABILITY BASED  
ADDRESSING IN A COMMUNICATION NETWORK**

**ABSTRACT**

Capability based addressing in a communication network enables protocol data units (PDUs) to be addressed to network constructs such as network elements or interfaces with particular capabilities rather than with specific addresses. This allows PDUs to be addressed to network constructs without first identifying the network constructs or even knowing of the existence of the construct. By broadcasting a capability based PDU onto a network it is therefore possible to communicate with a particular type of device rather than with a particular identified device. This is applicable, for example, in connection with loop and backdoor detection. By broadcasting a PDU onto a network, e.g. using a hello-response protocol, it is possible to identify network constructs that should not be present on the network if the communication network is configured properly. An alarm or corrective action may be taken upon detection of a response.